

CLAIMS

1. A vertical unipolar component formed in a semiconductor substrate, said component comprising junctions formed at the surface of parts of said substrate separated with insulated trenches extending in an upper portion of the substrate, in which the  
5 insulated trenches are filled with a vertical multiple-layer of at least two conductive elements separated by an insulating layer, the multiple-layer depth being, at most, equal to the thickness of said upper portion.
2. The component of claim 1, wherein the multiple-layer depth is equal to the  
10 thickness of the upper portion, the insulating layer also separating the elements of a substrate portion underlying the upper portion.
3. The component of claim 1, wherein at least part of the elements are  
conductive grains.  
15
4. The component of claim 1, wherein at least part of the elements are blocks  
exhibiting, in top view, a same surface area as the multiple-layer.
5. The component of claim 1, forming a Schottky diode having its cathode  
20 corresponding to said upper portion.
6. A method for manufacturing a vertical unipolar component in a  
semiconductor substrate, comprising:  
a) digging at least one vertical trench into an upper portion of the substrate;  
25 b) coating the lateral walls and the bottom of the trench with an insulating layer;  
c) depositing and etching a first conductive layer to partially fill the trench;  
d) coating the remaining portion of the first conductive layer with an insulating  
layer; and  
e) depositing and etching a second conductive layer to fill the trench.  
30
7. The method of claim 6, wherein the sequence of steps c) and d) is repeated.